

Application No. B0119

Updated: 12/18/2020 (See Underlined Text)

## Staff Summary

AltAir Paramount, LLC  
Paramount, California

Renewable Diesel, Renewable Jet Fuel, and Renewable Naphtha from Rendered  
Animal Fat

Joint Applicant: JBS Hyrum

Deemed Complete: 08/08/2020  
Posted for Comment: 12/2/2020  
Certified and Posted: 12/18/2020  
CI Effective: 7/1/2020  
Fuel Pathway Codes: See Below

### PATHWAY SUMMARY

Altair Paramount, LLC (Altair) has applied for fuel pathways for renewable diesel, renewable naphtha and renewable jet fuels derived from rendered animal fat feedstock and processed at their facility in Paramount, California. Altair sources rendered inedible animal fat from an integrated meatpacking and rendering facility owned by JBS<sup>1</sup> in Hyrum, Utah and JBS is a joint applicant with Altair on this application.

Rendered animal fat is pretreated at the Altair facility to remove oxygen, sulfur and other impurities which could deactivate catalyst or impact product yields. The rendered animal fat is then hydrotreated in a reactor to produce both liquid and gaseous products. The liquid stream is distilled to produce renewable diesel, renewable naphtha and renewable jet fuel. Propane and other light end distillates in the gaseous stream are consumed in the renewable diesel production process. Currently, all hydrogen required for process operations is imported from a hydrogen producer as a liquid via truck. Process energy used includes grid electricity and natural gas.

### Tallow Rendering Pathway

This application includes a site-specific rendering process energy value<sup>2</sup> for inedible animal fat sourced from the JBS Hyrum, Utah facility. All energy data for the facility are collected from dedicated meters and supporting information to enable assigning of appropriate emissions to the rendering operation. At the rendering facility, natural gas

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<sup>1</sup> <https://jbssa.com/>

<sup>2</sup> Deemed confidential by the joint applicant

and biogas harvested from onsite wastewater treatment plant is combusted in a boiler to produce steam for the rendering process. Emission factor of biogas was calculated by the Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Wastewater Sludge. A heat exchanger recovers energy from the rendering process to preheat process water used for cleaning and sterilization within the packing plant. Energy credit from the heat recovery system is calculated as a function of the process water mass flow rate, heat capacity and temperature differential across the heat exchanger. Rendering emissions are assigned proportionally between rendered animal fat and bone meal products using mass-based allocation.

## CARBON INTENSITIES OF RENEWABLE DIESEL PATHWAYS

Well-to-wheel GHG emissions of this pathway were modelled using the Tier 1 Simplified Carbon Intensity Calculator for Biodiesel and Renewable Diesel modified to accommodate the use of liquid hydrogen in the pre-treatment and fuel production process. The table lists the proposed Carbon Intensities (CIs) for these pathways.

**Proposed Pathway Carbon Intensities**

| Feedstock and Fuel   | Fuel Pathway Code                 | Pathway Description  | Direct Emissions (gCO <sub>2</sub> e/MJ) | Land Use Change (gCO <sub>2</sub> e/MJ) | Total (gCO <sub>2</sub> e/MJ) |
|--|-----------------------------------|--|--|---|-------------------------------|
| Site-specific rendered inedible animal fat to renewable diesel   | <u>RND002B0</u><br><u>1190200</u> | Renewable diesel produced from animal fat; natural gas, grid electricity and hydrogen; renewable diesel produced in California     | 19.51                                    | N/A                                     | 19.51                         |
| Site-specific rendered inedible animal fat to renewable naphtha  | <u>RNT002B0</u><br><u>1190300</u> | Renewable naphtha produced from animal fat; natural gas, grid electricity and hydrogen; renewable naphtha produced in California   | 19.51                                    | N/A                                     | 19.51                         |
| Site-specific rendered inedible animal fat to renewable jet fuel | <u>AJF002B0</u><br><u>1190100</u> | Renewable jet fuel produced from animal fat; natural gas, grid electricity and hydrogen; renewable jet fuel produced in California | 19.51                                    | N/A                                     | 19.51                         |

## OPERATING CONDITIONS

The certified CI values in the above table may be used to report and generate credits for fuel quantities that are produced at the facility in the manner described in the applicant's LCA report, and dispensed for transportation use in California, subject to the following requirements and conditions:

## **Altair Paramount Operating Conditions (Fuel Pathway Holder)**

1. Fuel pathway holders and Joint Applicants are subject to the requirements of the California Air Resources Board's (CARB) Low Carbon Fuel Standard (LCFS) regulation, which appears at sections 95480 to 95503 of title 17, California Code of Regulations. Requirements include ongoing monitoring, reporting, recordkeeping, and third-party verification of operational CI and a controlled process for providing product transfer documents or other similar records to counterparties or CARB.
2. Moisture content of feedstock is assumed to be zero for the reported operating period, based on the lower value of the range for allowable moisture content specified by purchase contract as <1%.
3. The applicant shall include monthly lab tests of the heating values for renewable naphtha and renewable jet fuel co-product streams in their reporting. CA-GREET3.0 heating values will continue to be used in the modified Tier 1 Simplified Carbon Intensity Calculator for Biodiesel and Renewable Diesel calculator until CARB directs a change to be consistent with the LCFS regulation and the LRT system credit calculator.
4. Since hydrogen is delivered to the Paramount facility as a liquid via truck, the applicant has provided an emissions factor for the imported hydrogen that has been approved by staff. The transportation mode and distance of hydrogen sourcing are subject to third-party verification. CARB must be notified if the applicant sources hydrogen from a facility which is different from the one stated in the application.
5. Appropriate adjustment to account for hydrogen delivered at 70F (compared to the standard of 60F in the CA-GREET3.0 model) was implemented as part of the CI calculations. Invoices or other purchase records for sourced liquid hydrogen quantities is subject to third-party verification.
6. The following fuel pathways were certified by CARB in 2019 and are not subject to third-party validation of the 2020 application: fuel pathway with joint applicant JBS in Brooks, Alberta; North American animal fat; and Australian animal fat. The feedstock inventory and usage are reported in the "Soy oil", "Tallow1", "Tallow2", "Tallow3", "Tallow4" and "Tallow5" tabs of the modified Simplified CI Calculator to preserve mass balance for calculating the carbon intensity value for the fuel pathway with joint applicant Swift/JBS in Hyrum, Utah. The fuel pathway with joint applicants Swift/JBS in Greeley, Colorado (Tallow5), and Swift/JBS in Hyrum, Utah (Tallow6) are subject to third-party validation of the 2020 application. All feedstock reported in the fuel production process is subject to chain-of-custody verification.

## **JBS Hyrum Specific Operating Conditions (Joint Applicant)**

1. Fuel pathway holders and Joint Applicants are subject to the requirements of the California Air Resources Board's (CARB) Low Carbon Fuel Standard (LCFS) regulation, which appears at sections 95480 to 95503 of title 17, California Code of Regulations. Requirements include ongoing monitoring, reporting, recordkeeping, and third-party verification of operational CI and a controlled

process for providing product transfer documents or other similar records to counterparties or CARB.

2. Emissions associated with rendering are determined by a mass allocation between the tallow and meat meal using metered temperature and flow data.
3. The energy content of sludge biogas is calculated by the methane content in the biogas stream. The applicant shall keep record of the data and provide it for verification as specified in the CARB-approved list of site-specific inputs.
4. An energy credit is given to the heat recovery system in the tallow rendering process. Heat recovered is a function of the process water mass flow rate, heat capacity and temperature differential across the heat exchanger. The applicant shall provide the flow rate and temperature of process water at the inlet and outlet of the heat exchanger for verification, as specified in the CARB-approved list of site-specific inputs.

### **Staff Analysis and Recommendation**

Staff has reviewed the application and has replicated the CI values calculated by the applicant using the modified version of the Tier 1 Simplified CI Calculator for Biodiesel and Renewable Diesel as well as the modified CA-GREET3.0 model. On the basis of this finding, CARB staff recommends that this application for a LCFS Tier 2 pathway stated in above table be posted for public comments as detailed in Section 95488.7(d)(5). After close of the public comment period, the applicant shall be required to address any substantive comments as determined by the Executive Officer. Any changes required based on comments received will be the responsibility of the applicant. Only after the Executive Officer has deemed responses to comments to be satisfactory, shall this pathway be deemed eligible for certification.

### **Comments and Certification**

These pathways did not receive public comments during the 10-day comment period. CARB certified the pathways.